BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of	)	
	)	
PUBLIC UTILITIES COMMISSION	)	
	)	DOCKET NO. 03-0371
Instituting a Proceeding to Investigate Distributed Generation in Hawaii.	)	
	)	

COUNTY OF MAUI'S RESPONSES TO INFORMATION REQUESTS FROM THE PUBLIC UTILITIES COMMISSION

CERTIFICATE OF SERVICE

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Statutory Authorizations

PUC-IR-1 Do Hawaii electric utilities have authority under existing statutes and franchises to own distributed generation either directly or through an affiliate? If yes, please identify the specific statutes and franchises which authorize such activity. If no, please describe whether existing laws should be altered to permit utility ownership (either directly or through an affiliate) and if so, what changes are needed?

RESPONSE The County of Maui ("COM") addressed this issue in direct testimony, COM-T-1; in rebuttal testimony, COM-RT-1; and in responses to information requests, as follows:

COM-T-1, page 7, line 20:

> This is the County of Maui's threshold issue. This threshold issue is important because it will set a precedent not only for CHP and other DG, but also for other distributed energy resources (i.e., energy efficiency/DSM). The COM's position is that MECO cannot own and operate consumers' DG/DER because MECO is not authorized to do so under its franchise and statutory authorizations.

COM-T-1, page 8, line 3:

Franchises: MECO was granted franchises to own and operate power grid systems (centrally generated electricity delivered over power lines) because power grid systems were generally considered natural monopoly enterprises. However, the ownership and operation of consumer DG and other DER are competitively viable and are not natural monopoly enterprises. Accordingly, the ownership and operation of consumer DG and DER appear inconsistent with MECO's franchises. Therefore, it is the COM's position that MECO's franchises would need to be amended to authorize MECO to own and operate consumer DG and/or other DER, before MECO can seek the Commission's approval of its suspended CHP program and tariff request, Docket No. 03-0366, or any other consumer DG and/or DER program and tariff request. MECO has not applied for such an amendment. We recommend that the Commission affirm this position.

COM-T-1, page 8, line 16:

State Statutes: The ownership and operation of consumer DG and DER for private use does not appear to be public utility activity, as defined by Hawaii Revised Statutes ("HRS") Chapter 269-1. This is appropriate because if it is considered a public utility activity, then all energy companies owning and operating consumer DG and DER for private use would be considered public utilities and their activities would need to be regulated by the Commission. Accordingly, MECO does not appear to have statutory authority to own and operate consumer DG and DER for private use. Therefore, it is the COM's position that HRS Chapter 269 would need to be amended to authorize public utilities to engage in the ownership and operation of privately used consumer energy products and services, before MECO can seek the Commission's approval of its suspended CHP program and tariff request, Docket No. 03-0366, or any other program and tariff request involving the ownership and

operation of privately used DG and/or DER. We recommend that the Commission affirm this position.

COM-T-1, page 10, line 17:

We feel that it is better to prevent market power abuses than it is to mitigate them though resource-intensive regulatory oversight. Therefore, the COM recommends that MECO should not be allowed to own and operate DG and other DER, except for grid back-up generation systems.

COM-T-1, page 17, line 6:

The COM recommends that MECO should be allowed to own and operate customer-sited DG systems for grid reserve capacity purposes only, such as in the case of the VPP program demonstration, and in emergency situations where the temporary deployment of DG could restore reliability and ensure safe operation of the grid system. Our position is that MECO can conduct this activity under its franchises because the provision of grid reserve capacity is considered a monopoly activity that is consistent with MECO's franchise. Also, our position is that MECO can conduct this activity as a public utility because the VPP generators are providing electric services to the public.

Response to HECO/Maui-DT-IR-37, Ref: COM-T-1, Page 9, Lines 4-9:

a. What is the County of Maui's definition of "privately used consumer energy products and services?"

RESPONSE: This refers to products and services for particular individuals. For more elaboration on this matter, see our response to HECO/Maui-DT-IR-41, item c.

b. From the standpoint of HRS 269, what differentiates a utility-owned and operated CHP system at a customer site

from a utility-owned and operated transformer that is installed at a customer site and is dedicated for the customer's use? (Note that a transformer may also be customer-owned.)

RESPONSE: The difference is that a transformer, much like a utility meter, is ancillary equipment in support of public utility services, whereas customer-sited CHP systems, serving particular individuals, are not ancillary equipment in support of public utility services. For further explanation, see our response to HECO/Maui-DT-IR-41, item c.

Response to HECO/Maui-DT-IR-38, Ref: COM-T-1, Page 7, Lines 20-23 through Page 8, Lines 1-14:

By Decision and Order No. 17957, filed August 8, 2000, Docket No. 99-0369, the Commission approved the installation of DG units at MECO's Hana Substation. Is it the County of Maui's position that the Hana Substation DG units are "prohibited" and that the Commission made an error in approving the installation of these DG units.?

RESPONSE: No. They are utility-owned units that support tariff utility service delivered over the grid.

Response to HECO/Maui-DT-IR-40, Ref: COM-T-1, Page 8, Lines 3-14:

The County of Maui states that MECO was granted franchises "to own and operate power grid systems (centrally generated electricity delivered over power lines) because power grid systems were generally considered natural monopoly enterprises." Please provide the basis for this statement and include a copy of any materials relied on in support of such statement.

RESPONSE: The basis for this statement is from the publication, "The Electric Utility

Franchise Expiration and Renewal Process," which states on page 19:

"Today, policy restrictions or prohibitions against competition are justified on grounds that electric utilities are "natural monopolies" and that competition would lead to wasteful duplication of facilities.

States prohibit or legislate against competition by allowing exclusive franchises and/or service areas, and through the state certification process for new constructions. The following statement by an early Chairman of the Connecticut Public Utilities Commission typifies prevailing thought:

"Public Service or utility companies are organized and granted certain franchise rights and privileges as public agents to supply the public within their respective franchise territories with a specified public necessity...the supplying of what is defined as a public utility is in its nature monopolistic, and for this reason exclusive grants or franchises are issued, and operation thereunder is subject to public regulation."

Response to HECO/Maui-DT-IR-41, Ref: COM-T-1, Page 8, Lines 16-18:

The County of Maui states "[t]he ownership and operation of consumer DG and DER for private use does not appear to be public utility activity, as defined by Hawaii Revised Statutes ("HRS") Chapter 269-1."

a. Please fully explain what the County of Maui means when it states "consumer DG and DER".

RESPONSE: This refers to DG and DER systems that are used primarily by a particular individual and is sited on the individual's property.

b. Please fully explain what the County of Maui means when it states "for private use".

RESPONSE: This refers to DG and DER systems that are used primarily by a particular individual.

c. Please fully explain what the County of Maui means when it states "public utility activity". Please provide the basis for such explanation and provide any materials relied on by the County of Maui in support of such statement.

RESPONSE: This refers to activities of "public utilities." The basis for what constitutes a "public utility" is the Hawaii Supreme Court Opinion in HELCO's appeal of the Commission's findings and conclusions in Docket No. 4779, in the matter of the application of Wind Power Pacific Investors-III and Waikoloa Water Co., Inc. Said Opinion identified "public utility" as follow:

"[W]hether the operator of a given business or enterprise is a public utility depends on whether or not the service rendered by it is of a public character and of public consequence and concern, which is a question necessarily dependent on the facts of the particular case, and the owner or person in control of property becomes a public utility only when and to the extent that his business and property are devoted to a public use. The test is, therefore, whether or not such person holds himself out, expressly or impliedly, as engaged in the business of supplying his product or service to the public, as a class, or to any limited portion of it, as contradistinguished from holding himself out as serving or ready to serve only particular individuals."

COM-RT-1, pages 4-16. We have not copied this reference here due to the length of this reference.

PUC-IR-2 Are there any changes required to existing statutes, rules, or regulations to facilitate non-utility ownership of distributed generation ("DG") facilities?

RESPONSE The County of Maui recommends changes to utility ratemaking to facilitate non-utility ownership of DG. Recommendations include the establishment of impact fees/credits, reasonable standby charges, contract requirements for large customers, county wheeling, and performance-based ratemaking. See COM-T-2, pages 53-96.

PUC-IR-3 What is the impact of Hawaii's net energy metering law, codified at Hawaii Revised Statutes ("HRS") § 269-101-111, (and recently amended this past legislative session to allow eligible systems of up to 50 kilowatts ("kW") to sell excess energy to the utility) on customer decisions to invest in DG? Should the existing 50 kW size limitation be increased to facilitate DG? Should the existing net energy metering law be expanded to include technologies other than those specified in the statute? Please identify any other changes that should be made to net metering laws, and why?

RESPONSE The potential impacts of Hawaii's net energy metering law are 1) stimulation of market demand for renewable DG, 2) increased demonstration of renewable DG utilizing non-utility investments, and 3) support for renewable DG companies. These impacts were identified by the COM in its Statement of Position in the Commission's Docket No. 94-0226, Renewable Energy Resource Investigation, at page E-21 of the Collaborative Document.

Existing 50 kW size limitation is not needed because it unnecessarily limits large commercial installations from participation and because the net metering penetration limit (.5 percent of system peak demand) protects ratepayers from excessive rate impacts. The monthly billing reconciliation period should be expanded to an annual billing reconciliation period. A one year reconciliation cycle accounts for the seasonal variations of solar and wind resources and would allow customer-generators to optimize the size of their renewable DG system for the seasonal variations.

Definition of Distributed Generation

PUC-IR-4 Should the Commission define distributed generation - and if so, how should it be defined? Should the definition be flexible or specific as to size and technology? Should the definition identify "eligible" technologies - and if so, how would such a list be derived? Or should the definition be sufficiently flexible to apply to a range of DG technologies, both those currently feasible as well as those not yet developed?

RESPONSE The Commission should define DG in a manner that is sufficiently flexible to apply to all existing and future technologies. The definition should not include "eligible" technologies because new technologies would make such a definition obsolete. We recommend that the Commission adopt the definition adopted by the California Public Utilities Commission in their initial investigation into DG (Rulemaking 98-12-015), which generally described DG as, "Distributed generation, as used in this decision, refers to facilities used to generate electricity and include such technologies as small scale generators or cogenerators using internal combustion engines or microturbines, wind turbines, photovoltaics, and fuel cells."

PUC-IR-5 Should the definition of distributed generation include DER, "distributed energy resources" and other demand side technologies or systems?

RESPONSE The definition of DG should not include DER, however, the definition for DER should include DG. We recommend that the Commission adopt the definition adopted by the California Public Utilities Commission in their initial investigation into DG (Rulemaking 98-12-015), which generally described DER as, "(t)he term DER includes distributed generation, as well as electric storage technologies, end use technologies, and DSM technologies."

The COM agrees with the the common position that DG is a subset of DER (also referred to by the COM as consumer energy products/services/technologies) and that DG should be treated like other DER resources.

PUC-IR-6 Should the Commission draw a distinction between "small scale" DG and other DG resources and if so, why? How should "small scale" DG be defined? What benefits can small scale DG offer (e.g., firm power, increased reliability, reduce transmission constraints) and what impacts does it have on the system?

RESPONSE All DG resources are "relatively" small, as compared to central generation resources, and therefore, no distinction in size is needed.

Additional Information on "Viable and Feasible DG" for Hawaii

PUC-IR-7 Please comment on HECO's listed criteria (see e.g., Seki Testimony at 20) for determining whether a DG technology is "viable and feasible" for Hawaii. Should other factors be considered as well?

RESPONSE The economic viability of DG systems goes beyond the cost-effectiveness of the DG system versus other options, per item 3) of the Seki testimony. For example, homeowners in Sacramento pay the Sacramento Municipal Utility District to install photovoltaic systems on their rooftops, even though they receive no cost savings, because those customers value the environmental and "status symbol" benefits more than the cost premium. The economic viability of DG differs from that of central generation because DG systems provide products and services, whereas the grid provides a commodity. The market values for distinguishable products and services (i.e., heating and cooling, roof insulation from PV, increased reliability and emergency capabilities, enhanced environmental image, improved or no emissions, etc.) differ from that of indistinguishable, fungible commodities (i.e., electricity).

PUC-IR-8 Have the "multiple benefits" of DG cited in Life of the Land's testimony (Wooley at 2) ever been quantified for Hawaii as they have in the other states mentioned in the testimony and if so, where can this information be found?

RESPONSE We are not aware of any information on "multiple benefits" beyond that which was mentioned in the Life of the Land testimony.

PUC-IR-9 Please identify any additional information provided in response to any party's Information Requests or filed in other dockets that provides further documentation or evidence of:

a. whether there are transmission, distribution generation constraints which could be served by DG;

b. the extent to which load growth is driving the need for distribution system enhancements;

c. where DG should be located to be most effective (and documentation for this conclusion); and

d. the availability or feasibility of alternative technologies.

RESPONSE The dispersed generation assessments for HECO, HELCO, and MECO, dated September 1997, by RUMLA, Inc., answer the above IR with specific DG project alternatives. The MECO DG assessment identifies specific locations (item c) for alternative DG technologies (item d) (i.e., internal combustion engine, fuel cell, and photovoltaic power systems) that address specific grid constraints (item a), caused by specific areas of load growth (item b). The MECO DG assessment, albeit limited in scope, is a good example of utility DG planning. These assessments were identified by HECO in their response to Life of the Land, LOL-SOP-IR-82, at page 10.

PUC-IR-10 Please identify with specificity the type and size of DG that can be currently deployed in Hawaii to maximize the benefits and minimize costs.

RESPONSE Based upon current practices in Hawaii, DG can be deployed as follows:

Large DG Systems: Multi-megawatt cogeneration systems, generally smaller than 20 mW, are deployed at large industrial/commercial properties, such as at sugar factories and refineries. Hydroelectric DG systems are also deployed at Maui's sugar plantation. Large to medium sized wind turbines are under consideration for Maui's sugar plantation and for the County of Maui.

Medium DG Systems: DG systems in the several hundred kW range, such as combined heat and power systems, photovoltaic systems, and wind systems can be deployed for commercial facilities. Emergency backup generators are also deployed and are commercially viable.

Small DG Systems: DG systems, generally under 100 kW, such as photovoltaic systems and wind systems are currently being deployed at homes and at small businesses.

PUC-IR-11 Identify with specificity existing environmental requirements which would impact the installation of DG and how this would occur? Are there any other regulatory requirements - *e.g.*, Building Codes or zoning laws that would impact installation of DG and if so, identify these with specificity.

RESPONSE Zoning laws could affect DG installations, depending upon the use of the DG systems. For example, DG systems that provide energy services for a permitted use on the property would be considered consistent with the zoning. For example, an onsite photovoltaic system providing power to a home in a residentially zoned district would be consistent with the zoning. However, if a DG system does not provide energy services primarily for a permitted use on the property, then the DG system may not be considered consistent with the zoning designation. For example, if a photovoltaic system on a home in a residentially zoned district provides most or all of its power to the grid or to a nearby commercial property, then the photovoltaic system may not be deemed consistent with the zoning and a permit or change in zoning may be required.

Impacts of Distributed Generation

PUC-IR-12 What are the beneficial impacts of DG on the transmission and distribution ("T&D") system and more importantly, how may they be quantified and assessed for value?

RESPONSE See IR-9 above.

PUC-IR-13 What are the limits to the level of DG that the grid can absorb without adverse impacts? Please identify studies or other documentation in support of your response.

RESPONSE There may be no limits, depending upon the location and the time frame considered. For the grid systems on Molokai and Lanai, it is arguable that they are already fully powered by DG units, however, those DG units (one mW diesel generators) are configured in a central station design.

Emerging control systems and broadband powerline technologies should facilitate and promote the growth of DG interconnected with the grid. The following is an example of an emerging control system, from a press release from the U.S. Department of Energy's Pacific Northwest National Laboratory: (for the complete press release, see http://www.pnl.gov/news/2004/04-60.htm)

> RICHLAND, Wash. -- Can information technology and smart building controls reduce the need to build expensive new electricity transmission lines? Researchers at the Department of Energy's Pacific Northwest National Laboratory think they might. In a demonstration with the Bonneville Power Administration, PNNL is exploring the impacts of reducing electrical demand and on-site energy production at several buildings in Richland, where PNNL performs research for the federal government.
>
> At the Applied Process Engineering Laboratory, PNNL installed a 30-kilowatt microturbine system. The small, natural gas-powered turbine can be started remotely by BPA to produce electricity for the building during times of peak electrical demand. This on-site production, called distributed generation, helps reduce stress on transmission lines by supplying some of the power for the building directly instead of pulling from the regional power grid...
>
> Elsewhere, utilities have demonstrated load shedding and distributed generation as a way to defer building new electrical generation facilities. In the Northwest, BPA, through its Non-Wires Solutions program, is exploring ways

> to defer the construction of new transmission lines throughout the region. The PNNL demonstration project is part of this effort.

The integration of DG with the grid is significant in countries with a lot of cogeneration. According to "A Guide to Cogeneration," dated March 2001 by EDUCOGEN, cogeneration provided 50% of Denmark's power production, 40% of The Netherlands' power production, and around 35% of Finland's power production. See http://www.cogen.org/Downloadables/Projects/EDUCOGEN_Cogen_Guide.pdf.

The Cogeneration Guide also describes how cogeneration gained market share/grid penetration. Finland is a relevant example for Hawaii because Finland adopted a competitive market approach, similar to the general approach advocated by the County of Maui. The Cogeneration Guide states:

> The development of cogeneration in Finland has not to such an extent been a consequence of specific political objectives and action. Finland has always been one of the most liberalised markets in Europe. The main reasons for the development of cogeneration are:
>
> - Absence of barriers;
> - CHP was recognised as the most economic means of generating electricity;
> - There tends--at least in the past, but maybe less so at the present--greater acceptance in Finland for longer payback times;
> - High demand for heating.

PUC-IR-14 What are the limits of bi-directional power?

RESPONSE Cost may be the only limit to bi-directional power. The potential and the limits of bi-directional power would be tested by the virtual power plant demonstration project, identified by the County of Maui at COM-T-1, pages 16-17. Portland General Electric Company's Dispatchable Standby Generation program is a good example of the virtual power plant demonstration project identified by the COM. Information from Portland General Electric's website follows on pages 22-27 (from http://www.portlandgeneral.com/business/large_industrial/dispatchable_generation.asp?bhcp=1)

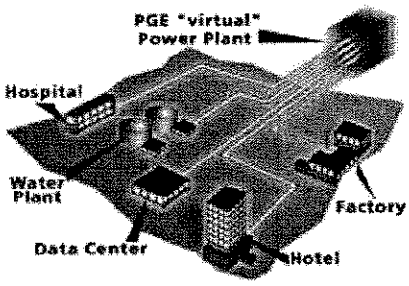
Large & Industrial Accounts
Dispatchable Generation
FAQ

Dispatchable Standby Generation

Capture enhanced reliability and operational savings from your backup electric generation system.

If your business requires standby electric generation to ensure vital production or service performance, you know the daily reality: constant maintenance of your backup system in the hope that it will perform when you need it.

For most of the year, however, the only thing your backup system generates is a stream of operational and maintenance expenses.



From PGE's control center, a dispatcher can start any or all of the standby generators within the system. Up to 100 megawatts of power can be generated during peak hours.

PGE's Dispatchable Standby Generation program puts your standby generators to work for up to 400 hours annually to meet peak power demands — and PGE picks up all your maintenance and fuel expenses. Your generator is always available to backup your facility and will operate synchronized and in parallel with PGE power so there is no service interruption.

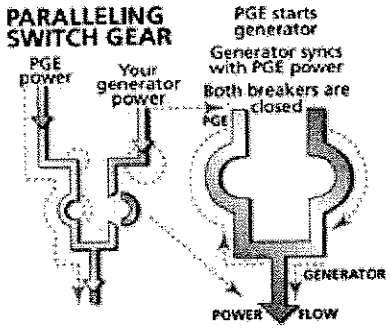
For the option of running your generators when needed, PGE will:

- Upgrade switchgear and install control and communications hardware at no charge, increasing reliability and improving control of your system.
- Assume all maintenance and operation costs for your system, eliminating your costs for fuel, repairs, tune-ups, oil changes, filter replacements and overhauls.
- Provide additional sound attenuation, if needed, quieting the generator system.
- Provide additional fuel storage, if needed, expanding your operating time during those weather-related, long-term power outages.
- Test your system at least once a month under full load; frequent full-load testing ensures the generator will operate successfully during an outage and is better for the engine.

A powerful network

PGE equips your standby generator with paralleling switchgear,

allowing the unit to be operated in synchronization with the electric distribution system. Qualifying commercial and industrial customers (those with standby generators of 250 kilowatts and up) are networked with PGE's communications and power control system. The standby units can be monitored and dispatched from PGE's control center.



In case of an outage, the standby generator functions as it normally would, providing backup power to your facility for the duration of the outage. However, when power returns to the grid, your facility moves back to utility power without additional interruption.

Program participants pay standard electric rates for power used, regardless of where it's being generated. PGE pays all the fuel costs for the standby generators, even during an outage, adding to the operational savings.

So how does this work?

Read our **FAQ**, which answers common questions about how the program works, why PGE is offering the DSG program and how your business can take advantage of this savings opportunity.

Unleash the full potential of your standby generator

Interested? At your request, we will provide a detailed analysis and proposal tailored to your business requirements. Please contact your PGE representative or **e-mail us**. You may also call Mark Osborn, DSG program manager, at 503-464-8347.

If you are considering purchasing a new generator or upgrading to a larger system of backup generation, PGE provides convenient financing on request. Financing can be added to your monthly electric bill.

Find a Job Go Search PGE: Go Sign In

Portland General Electric

Update Your Info | View Your Bill | Pay Your Bill | Get Your Bill Online | Account Balance | Start, Stop or Move

Large & Industrial Accounts
Dispatchable Generation
FAQ

FAQ

Q: Why is PGE offering the Dispatchable Standby Generation (DSG) program?

- The tight supply of electricity and resulting high prices have created new business opportunities for PGE customers who can simultaneously use power, while making more power available in PGE's territory. The DSG program improves a participant's bottom line by having PGE:
  - Cover the operating and maintenance costs of the DSG power system
  - Contribute to the customer's standby generator system installation

  PGE benefits by accessing new power resources for all its customers. By linking many generators to the electric distribution system and turning them on at peak demand hours, PGE and program participants are helping keep the price of power down and the supply up with an innovative business relationship.

Q: What happens if we need power at the same time PGE is using the DSG system?

- Your backup generator is always available to serve you without interruption. Your generator and PGE are synchronized and operate in parallel, automatically backing each other up. If one system fails, the other takes over — significantly increasing your reliability.

  The DSG system is set up so your facility's loads are automatically served first and then any excess power you generate flows into the PGE system. For example, if your building load is 1,000 kilowatts, and the generator is putting out 1,500 kilowatts, only 500 kilowatts are serving other PGE customers.

Q: Will the DSG program put more wear and tear on my company's generator?

- The DSG program will probably extend the life of your backup/emergency power system. The program operators regularly start up the generators and test them at full load. More frequent full load runs are better for the diesel engines. The tests also save the costs of load bank testing and assure your organization that the equipment will start up and function properly in a power outage.

Q: Will PGE help pay for new generators? Does PGE help if I'm installing new generators?

- The generators themselves are not funded by PGE. However, whether you are building a new facility with backup power, adding generators or upgrading your switch gear, PGE helps fund the installation. PGE provides most of the cost for the latest generator control and paralleling circuit breaker technology. Many high-tech companies are already using this equipment for seamless transition from generators to the power grid.

Q: Can you assure us that our emergency power system is maintained to our standards of reliability and quality?

- Yes, your facility's staff and PGE will jointly decide on the most qualified maintenance provider. This may be your existing provider, your own staff or a new provider that best meets your needs. Our agreement with maintenance providers will include annual performance reviews and if they are not performing at the levels we expect, we can agree to change providers.

Q: Who is responsible for maintenance and repair?

- This is another win-win aspect of the program for participating businesses, institutions and PGE. All regular maintenance and any repair bills are paid by PGE. The utility sees this as a reasonable cost to assure that your generator is available at all times to participate in the program, and it lowers your cost of doing business. We estimate that this may easily save $50,000 to $100,000 over a five-year period.

  PGE has created the DSG program with the highest standards. Should your equipment fail to function as required for your emergency/backup use, the maintenance provider selected by you and PGE will begin diagnosing the problem within four hours of notification. If appropriate, the provider will then repair or replace the equipment (at PGE's discretion) with comparable items as required to meet your system's needs.

Q: Who pays for fuel?

- PGE pays for fuel regardless of whether the fuel was used only for your needs or to serve the utility distribution system. We do require the use of transportation grade, low-sulfur, diesel fuel.

Q: Can I still participate if I choose to buy power from an independent supplier?

- Under Oregon's restructuring law, you can choose to purchase your power from an independent provide. If you make this choice, you can still take advantage of the DSG program. You, PGE and your independent supplier would negotiate an agreement, which would provide accurate billing and properly account for the power used by your facility, even when the generators are operating.

Q: Are there any regulatory or tax issues I should be aware of?

- Participating in the DSG program will not affect your taxes. Because PGE will own a portion of the system of which the generators are a part, the output of the generators will be considered PGE power. PGE will also handle all power regulation issues related to the operation of your DSG power system.

Q: Under what circumstances would my organization have to reimburse PGE for its investment?

- PGE is providing a significant investment to upgrade your property. PGE is counting on your generation to maintain an efficient power system and reduce costs. If you cancel the agreement without cause or without proper notice, most of the equipment would typically remain with you and you would be responsible for reimbursing PGE for the value of that equipment.

  If PGE cancels the agreement, PGE will remove any PGE equipment and leave your facility in such condition as will enable you to operate the generators for your own backup use. Under these circumstances, no equipment reimbursement would be required.

Q: Can a business cancel the DSG agreement?

- In the unlikely event that PGE fails to maintain or repair the equipment as required in the agreement, you may cancel the contract before its normal expiration date. As mentioned above, the maintenance service provider is required to begin diagnosing a problem within four hours. If a problem cannot be fixed within 30 days, you would have the option to terminate the agreement.

Q: What happens if the actual project cost is greater than PGE's projections because of unforeseen conditions?

- In a retrofit installation or for PGE owned equipment, PGE will be responsible for all cost over-runs related to items installed under the Dispatchable Generation Agreement. With a new facility or new generator plant, where you would have primary responsibility, we would negotiate an appropriate cost sharing solution.

Q: How is PGE handling the environmental impact of the DSG program?

- PGE cares a great deal about the environment. We will be installing oxidation catalysts on all DSG program engine-generators. These catalysts significantly reduce carbon monoxide (CO), hydrocarbons (HC) and odor from the diesel engines. Research is also underway to explore new ways to reduce nitrogen oxides (NO_X) in the engines we use for the program. PGE is also doing extensive research on the use of dual fuels. This could create opportunities to burn natural gas instead of diesel oil in many generators, significantly reducing emissions into the

air. Every generating system in the program is issued a permit by the Oregon Department of Environmental quality, assuring that the engines are operating within standards.

Q: How can I learn more about PGE's Dispatchable Standby Generation program?

- Please contact your PGE representative or **e-mail us**. You may also call Mark Osborn, DSG program manager, at 503-464-8347.

PUC-IR-15 Should the design of new distribution feeders consider DG?

RESPONSE Yes, and in a manner similar to what is described in IR-9 above.

PUC-IR-16 Can the concept of micro-grids be made practical? Can they be effectively utilized in Hawaii?

RESPONSE There is no apparent reason micro-grids cannot be made practical. Moreover, micro-grids could be desirable for specialized uses, such as in high tech where premium power services are needed or in industrial parks where low cost heat and power services are wanted. The following is from Wired.com, http://www.wired.com/wired/archive/9.07/juice.html):

> EPRI foresees the popularity of DC microgrids: high-nines islands in the choppy seas of imperfect electricity. These microgrids could be one of the amenities available in "premium-power parks," along with fast Net connections and other services. Such parks already exist. UC Irvine teamed up with the Southern California Gas Company and Southern California Edison to build one, specifically as a "living laboratory" to incubate technologies and business models for the next grid. EPRI sees these islands expanding to provide super-reliable, digital-ready power to urban centers.

PUC-IR-17 Should utilities be offered incentives to facilitate DG?

RESPONSE Yes, by being allowed to make investments in DG via demand-side generation rebates.

PUC-IR-18 How can utility distribution practices be modified to enable DG to provide distribution deferral and be compensated for it?

RESPONSE This question is a subset of IR-34 below. See the response to IR-34.

Ownership

PUC-IR-19 If utilities are permitted to own distributed generation through affiliates, are any changes required to existing statutes, rules and regulations governing affiliates to guard against cross subsidization, to protect ratepayers and ensure competition between affiliates and non-affiliates on equal footing? Please identify potentially applicable statutes, rules and regulations and specify necessary changes.

RESPONSE If utilities are permitted to own distributed generation through affiliates, rules and regulations relating to affiliate transactions should be upgraded to the highest national standard.

Interconnection

PUC-IR-20 What costs are associated with DG interconnection to the distribution grid?

a. If a utility overhead line is fully depreciated and upgrades or replacements are needed for distribution interconnection, does the DG customer pay for the upgrade replacement cost?

RESPONSE Logically, this should depend on whether the replacement is needed to continue to serve existing customers, and whether the DG customer provides distribution system benefits. If the line needs to be replaced to serve other customers, and the presence of a potential DG site would allow a smaller line to be installed, the DG customer should receive a credit. If, on the other hand, the upgrade is needed only to provide standby service to a new site that is normally served from DG, then the line extension policy should apply, with the customer paying an impact fee for any portion of the system expansion that is not expected to be recovered in standby rates.

b. Should a DG customer be required to pay for distribution system upgrades that would have otherwise occurred in the absence of a DG interconnection?

RESPONSE No. The DG customer should receive a credit because DG allows the distribution system to avoid added expense.

c. Should subsequent DG customers on a particular feeder line be responsible for costs applied to the first DG customer on the line? If so, what type of crediting mechanism should be put in place for the first customer?

RESPONSE The same approach as applies to latecomers on a distribution line extension should apply, with a finite period (5 years typically) in which latecomers reimburse an initial customer that paid through a Customer Advance or Contribution In Aid of Construction for a line extension.

d. What mechanism should be used for recovery of these costs (*e.g.*, fixed vs. demand charges, marginal cost vs. average cost, etc...)

RESPONSE The difference between marginal costs and average costs for all services should be recovered in a one-time connection

charge. This should encompass generation, transmission, and distribution costs. Existing customers with stable loads should not suffer rate increases as a result of expanded service.

PUC-IR-21 Should HECO's, HELCO's and MECO's Rule 14.H on interconnection specific to distributed generation be modified to further facilitate or encourage distributed generation? If so, please identify with specificity those aspects of Rule 14.H that must be changed? Should the same interconnection rules for distributed generation apply to both the HECO companies and KIUC?

RESPONSE The County of Maui has not examined this issue. We believe that the loss of several parties engaged in DG development impairs the Commission's ability to get realistic information on this issue.

The County of Maui takes no position on interconnection regulations in Kauai.

PUC-IR-22 What has been the experience of the parties to date with interconnecting distributed generation facilities under either HECO's, HELCO's or MECO's Rule 14.H?

RESPONSE The County of Maui is aware that customers have had difficulty securing interconnection of DG facilities in the past, see COM-RT-1, at pages 12-14. We have been informed by HECO that these problems and delays have been resolved. However, even if problems have been resolved for the time being, it doesn't necessarily follow that problems and delays could not reoccur if HECO is allowed to compete against DG companies.

Rate Structure and Cost Recovery

PUC-IR-23 Is the current allocation of distribution charges between customer, demand and usage charges adequate or should it be modified to accommodate DG? What is the appropriate allocation between utilities and ratepayers of revenues foregone as a result of the deployment of DG?

RESPONSE The current approach to rate design recovers a portion of the delivery costs in the usage charge. This it typical for the industry, consistent with generally accepted ratemaking principles, and should continue regardless of any DG related issues. Efforts to redesign rates to recovery more of the delivery cost in fixed charges will discourage energy efficiency investments by all customers, discourage direct application renewable resource investments, and shift costs from larger users (who can do the most to reduce Hawaii's oil dependence) to smaller users (who are already minimizing that dependence).

Between rate proceedings, the Company should absorb any lost distribution revenues as a result of the deployment of DG, because it is the Company that is enjoying the avoidance of generation, transmission, and distribution investment that would be required but for the deployment of DG.

PUC-IR-24 Should credits be offered to customers or third parties that can defer the need for localized distribution expenditures. If yes, how should these credits be awarded, calculated and administered? And how should the cost of any credits or incentives be allocated and recovered by the distribution company?

RESPONSE Yes. Ideally, the Company's IRP should identify specific distribution circuits or transmission planning areas where capacity additions will be required within a five year period, and specific credits (i.e., IRP rebates) be allowed in those locations. However, because any load reduction anywhere on the system improves the reliability of the system, even customers in other locations that install DG are providing system benefits, and should receive some distribution credit.

PUC-IR-25 How can services be identified for unbundling and how should rates be calculated? Please comment on the viability of the Consumer Advocate's proposal for unbundling (Consumer Advocate Testimony, Witness Herz at 60-63). Will unbundling rates ensure that the utility recovers its cost of service from the customer benefitting from DG and does not shift costs to other ratepayers? (See, e.g., Witness Herz, testimony at 23, 60)

RESPONSE Unbundling rates will provide no assurance of relevant cost recovery. The costs that are recovered in rates are embedded costs. The costs that are avoided through DG investment are marginal costs. In many cases the differences between these are huge. Mr. Lazar's testimony points out that the average embedded generation cost on the MECO system is under $1,000/kW, while the average cost of new generation is $3,000/kW.

If unbundling is pursued, the fixed costs attributable to jointly used plant (all generation and all transmission, plus all non-customer-specific distribution plant) should be recovered in a daily rate, so that multiple DG customers using standby service will appropriately share both the cost and the benefit of the facilities that provide that standby service.

PUC-IR-26 Should the commission consider decoupling revenues from sales so that the utility is indifferent to installation of DG that has the effect of reducing sales?

RESPONSE Yes.

PUC-IR-27 Should the electric utilities institute termination charges (exit fees) for customers who install distributed generation and if so how should they be designed?

RESPONSE If long-run marginal costs of new resources exceed average costs, departing customers should receive a "load relief credit" and incoming customers should pay an impact fee or hook-up charge. This is the current situation on Maui.

In a situation where long-run marginal costs of new resources were lower than existing average costs, exit fees might be appropriate.

The identical logic that supports exit fees in some other jurisdictions is the basis of the proposal for impact fees on Maui.

PUC-IR-28 Should standby rates similar to those implemented by HELCO (see Decision and Order No. 18575, filed on June 1, 2001, in Docket 990207) be adopted by HECO or MECO? Is the flat fee standby charge used by KIUC an appropriate approach for other utilities? Or should the Commission repeal and prohibit standby charges?

RESPONSE The HELCO standby charge is excessive. It fails to recognize the distribution cost savings that DG provides, and fails to recognize the diversity and peak load mitigation that results from having a large number of DG owners, all scheduling maintenance in coordination with the Company.

The Commission should establish cost-based standby charges, that recover all relevant fixed costs of providing standby service on a daily basis. In this manner, if one unit of standby capacity can serve the standby needs of five, ten, or twenty DG customers, each would pay an appropriate fraction of the cost of that standby capacity, so that the total revenue received by the Company from a multitude of diverse DG customers would cover the incremental cost incurred by the utility to provide DG standby service.

Repealing and prohibiting standby charges would leave DG customers forced to pay the tariff rate for the Schedule J or P rate, which include most of the fixed costs of generation, transmission, and distribution in the demand charge. The effect of this would be to overcharge DG customers, many of whom can "share" a unit of standby capacity.

PUC-IR-29 Please provide comments on the issues below related to standby service proposals.

a. To the extent that standby rates are implemented (for those utilities that do not have them) or modified, should demand subscription or non-firm standby rates be included? Please comment on the viability and desirability of a non-firm or "best efforts" standby service (see e.g. County of Maui testimony, Witness Lazar at 78)

RESPONSE Yes, best-efforts standby service should be available. Customers that have the option to curtail load should not be required to do so if the Company has available capacity, nor should the Company be denied potential revenue. A best-efforts standby rate results in a benefit to DG owners, to the Company, and to non-participating ratepayers.

b. Should regulated utilities be required to charge themselves or their affiliates the same standby charges with respect to the regulated or affiliate owned, operated and maintained distributed generation facilities?

RESPONSE Yes, standby rates should be applied on a non-discriminatory basis.

c. Should standby rates be the same for all Hawaii electric utilities including KIUC?

RESPONSE The County of Maui takes no position on appropriate rate design for Kauai.

d. Should supplemental service be distinguished from stand-by service and if so, should supplemental service continue to be charged at the otherwise applicable tariff?

RESPONSE Supplemental service is and should be distinguished. The tariff rate is the appropriate benchmark. A well-defined and fair method is needed to distinguish between standby service and supplemental service, particularly when DG equipment has partial outages (for example, if a customer has two DG units, and one is out of service).

PUC-IR-30 Please describe the electric utilities' current policies regarding "hook up fees" or impact fees. Should existing policies regarding hook up fees be revised so as to remove barriers to development of distributed generation? Please comment on the County of Maui's proposal regarding impact fees. (*see*, discussion County of Maui Testimony; *e.g.*, Kobayashi at 12; Lazar at 18-19,33)

RESPONSE Each of the companies has a current distribution hook-up fee that recovers the difference between marginal distribution costs and embedded distribution rates from new customers. The proposal for generation impact fees simply extends this existing principle to power supply costs. The objective is the same to prevent existing customers from subsidizing new customers' service.

PUC-IR-31 Should a systems benefit charge be adopted to recover costs of distributed generation? If yes, how should such a charge be established?

RESPONSE If DG provides public benefits, the utility should provide appropriate incentives to customers installing DG equipment. Like energy conservation programs, these incentives should be funded from the IRP surcharge, which we feel is synonymous with a systems benefit charge.

PUC-IR-32 Will an inverted block rate design (see e.g. County of Maui, Witness Kobayashi at 12, Lazar at 86) result in better allocation of costs of new DG facilities? What are other benefits of inverted block rate design (if any) with respect to promoting DG?

RESPONSE An inverted rate design is most applicable to the residential sector. The distributed generation resources most likely to result from an inverted rate are solar water heaters, residential photovoltaics, and perhaps residential-scale CHP units in larger homes and/or multi-family developments. In addition, inverted rates will encourage distributed energy resources such as energy efficiency measures.

PUC-IR-33 How should costs associated with distributed generation be recovered?

a. How should the costs of fuel purchased for utility owned, customer site DG facilities be handled? Should it be included in the energy rate adjustment clause applicable to all customers or recovered in some other manner?

RESPONSE The County of Maui opposes the Company's application for installation of utility-owned, customer-site DG facilities; therefore, the County of Maui opposes the incurrence ot and recovery of fuel for such facilities. In any case, these costs should not be shifted to non-participating customers through the fuel adjustment mechanism.

b. Should regulated utilities be permitted to include in their regulated rates the cost of distributed generation equipment and its maintenance?

RESPONSE The only element of DG equipment and maintenance that belongs in the utility revenue requirement are costs associated with knitting existing emergency generators into a virtual power plant and costs associated with utility DG systems serving public uses, such as the DG units at a Hana substation. This would include synchronization and central dispatch facilities, and labor to ensure that systems are available for service as needed.

Integrated Resource Plan Process

PUC-IR-34 How should the existing IRP process and the deployment of DG be synchronized to maximize the benefits of DG?

RESPONSE First, the existing IRP process and the deployment of DG should be synchronized by combining the IRP process with utility DG planning. A limited example of utility DG planning was identified in IR-9 above. Significant aspects of this synchronization include the addition of transmission and distribution planning to the IRP process and the addition of area specific load growth forecasting to the IRP process.

Second, the existing IRP process should be synchronized with the deployment of DG through implementation of demand-side generation programs.

DATED: Wailuku, Maui, Hawaii, November 22, 2004.

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